in the place of what she destroyed save a race laden with disadvantages and a few mission churches crumbling to decay. The spoil she obtained amounted altogether to some seven thousand millions of dollars." And all this cost the conquerors practically nothing in comparison. And here again the author remarks, "the value of these precious metals is *not* due to the cost of production, but to their usefulness and their quality, to the relation of supply to demand."

It is gratifying to note that Christian civilization now adopts different methods and "the acquisition of the precious metals by means of conquest is virtually over."

The volume is so crowded with facts, as well as with the results of thought and argument, that no ordinary book review can do the author justice; in the words of those who reviewed the first (incomplete) edition, it 'abounds with vivid description and practical knowledge; it is replete with information, and evinces much care and study; it is able and exhaustive; of the highest scientific value, yet readable as a novel.'

In the chapter on 'Production, Consumption and Stocks of Metal' the author does not conceal his poor opinion of the 'defective and misleading statistics of the Mint Bureau,' supported in its methods by Congress, and reflecting 'the narrow views of the Mint Director.' Valuable features are the chronological summaries, the bibliography (with press marks of the British Museum Library) and the index. The volume is clearly printed on good paper, probably in England, as we observe the words 'honour,' 'labour' and 'negros,' instead of the more familiar 'negroes.' There are two illustrations, a mining scene in California and a portrait of General Nelson A. Miles, who is casually mentioned in the text.

The volume is of the highest value.

Henry Carrington Bolton.

SOCIETIES AND ACADEMIES.

CALENDAR.

The American Association for the Advancement of Science. A meeting of the council will be held at the Quadrangle Club, University of Chicago, on the afternoon of January 1. Section H (Anthropology) will meet at the Field Columbian Museum, Chicago, on December 31 and January 1. The next regular meeting of the Association will be held at Pittsburgh, Pa., from June 28 to July 3. A winter meeting is planned to be held at Washington, during the convocation week of 1902–3.

The American Society of Naturalists will hold its annual meeting at the University of Chicago on December 31 and January 1. In conjunction with it will meet the Naturalists of the Central States and several affiliated societies, including The American Morphological Society, The American Physiological Society, December 30 and 31, The American Psychological Association and the Western Philosophical Association, December 31 and January 1 and 2.

PHILOSOPHICAL SOCIETY OF WASHINGTON.

The 538th meeting was held October 12, 1901.

An obituary notice of Mr. C. A. Schott, for many years chief of the computing division of the Coast and Geodetic Survey, was read by Superintendent O. H. Tittmann; and Mr. R. A. Fessenden presented, through Mr. Winston, a paper on 'Progress in Practical and Theoretical Electricity' giving a rapid sketch of the condition of all the great branches of electricity.

The 539th meeting was held October 26, 1901.

Mr. Marcus Baker described 'A Dictionary of Alaskan Names,' now in press, to be published by the U. S. Geological Survey, pointing out its characteristics and the principles on which it is made. It will contain about 6,500 adopted names, 3,000 obsolete names and cross-references and 60 pages devoted to a catalogue of authorities with brief accounts of the explorers. Dr. Dall spoke appreciatively of the work.

Mr. C. H. Hinton, of the Nautical Almanac Office, then read by invitation a paper on 'A Fourth Dimension in Space demanded by Electrical Phenomena.' The paper cannot be summarized, but may be characterized as an attempt to apply to 4-space some principles of quaternions developed for 3-space.

The 540th regular meeting was held November 9, 1901, Vice-President Adler in the chair.

Mr. Hinton continued the presentation of his

views begun at the last meeting on an explanation of electrical phenomena by a fourth dimension in space.

Dr. G. M. Sternberg, Surgeon-general of the Army, reported on 'Health Conditions in the Philippines.' He finds that the health of the troops has been constantly improving; smallpox is practically stamped out; typhoid and malarial fevers and heat strokes are almost unknown. Dysentery is one of the most serious troubles; so at most barracks distilled or sterilized water is supplied. In the discussion that followed Dr. Dall called attention to the absence of malaria in Alaska, although mosquitoes of several species are very abundant.

Dr. Adler reported on the progress of the 'International Catalogue of Scientific Literature.' After conferences for several years, definite plans were settled on during the past summer. Owing to the failure of Congress to take action, the United States was not officially represented, but Mr. Herbert Putnam, Librarian of Congress, was in London and had some share in the negotiations. The plan adopted requires each country to index and classify the literature published within its borders pertaining to 17 branches of science, beginning with 1901; the Smithsonian Institution has temporarily undertaken this work for the United States. The material is then to be arranged and published by the Royal Society in 17 volumes annually; these will be sold separately. About 320 sets have been subscribed for, for 5 years, at £1 per volume; 65 sets are to come to the United States. The speaker described some of the difficulties met with in formulating the plans, gave various details regarding the work, and exhibited the schemes of minute classification to be followed by the indexers.

CHARLES K. WEAD,
Secretary.

BIOLOGICAL SOCIETY OF WASHINGTON.

THE 343d meeting was held on Saturday evening, November 16.

C. P. Hartley exhibited some malformed ears of corn, stating that their interest lay in the fact that they had been grown from seed taken from an ear similarly abnormal, the malformation having been reproduced.

H. E. Van Deman showed a specimen of the ripe fruit of the guava from Florida, and made some remarks on the extent to which this fruit was now being cultivated.

L. O. Howard announced that he had received a letter from Mr. C. L. Marlatt, announcing the discovery of the long-sought original habitat of the San José scale insect; this was found to be in China, in the region to the south of the Great Wall. The scale insect was preyed upon by a species of ladybird beetle, living examples of which were now on their way to the United States.

H. G. Dyar presented some 'Notes on Mosquito Larvæ,' being a summary of investigations made during the past summer and including the following species: *Anopheles crucians, punctipennis, maculipennis; Culex solicitans, territans, pungens, confinis, canadensis, sylvestris; Stegomyia fasciata; Ædes smithii; Uranotænia sapphirina;* and *Psorophora ciliata.* The habits and habitats of these various larvæ were described, and it was pointed out that there was great diversity in the latter. Some species preferred clear water, others infested turbid pools, and still others were found in brackish water. The speaker showed drawings of the different larvæ and drew attention to their peculiarities and their distinctive specific characters. It was noted that a species of fresh-water hydroid was seen to feed on mosquito larvæ, while on the other hand one species of larvæ fed on bacteria and another fed on other larvæ.

C. B. Simpson gave some 'Observations on Jack Rabbits,' telling of their rapid increase in parts of the west and describing their runways among the sage brush and the manner in which they were hunted by their great enemies the coyotes.

Vernon Bailey described 'The Little Deer of the Chisos Mountains, Texas,' stating that the same species, *Odocoileus couesi*, was also found in Mexico, Arizona and New Mexico, so that their occurrence in this locality was an extension of their known range. Owing to the distance of the Chisos Mountains from the railroad and the unfitness of the country for grazing purposes, the deer were still to be found there in considerable numbers. The speaker said that an adult buck would weigh only one hun-

dred pounds, and a doe much less, and pointed out the differences between the color of the summer coats of this and the large white-tailed deer of Texas, *Odocoileus texensis*.

Barton W. Evermann spoke of 'Birds in the Dry Season,' stating that few realized how important to birds was a supply of water, nor the influence of drouth on the distribution of birds. During an unusually dry summer the California quails did not breed, but kept together in flocks as they did during the fall. The speaker gave a list of eighteen species of birds that were seen to resort to a single leaking water spigot and described the manner in which various species drank. In conclusion it was suggested that during dry seasons, or in arid regions, drinking places should be provided for the benefit of the birds.

F. A. LUCAS.

DISCUSSION AND CORRESPONDENCE.

METEOROLOGICAL OBSERVATIONS WITH KITES AT SEA.

TO THE EDITOR OF SCIENCE: On page 412 of SCIENCE I stated that meteorological observations were about to be attempted with kites flown from a transatlantic steamer. With the aid of my assistant, Mr. Sweetland, and through the courtesy of Captain McAuley, this was accomplished on board the Dominion steamship *Commonwealth*, which left Boston for Liverpool on August 28. During most of the voyage we were within an area of high barometric pressure that was drifting slowly southeastward and out of which light winds blew. Although these were insufficient to raise the kites, the ship's speed of 16 knots created a corresponding wind from an easterly direction that sufficed to lift the kites on five of the eight days occupied by the voyage to Queenstown. On one of the three unfavorable days, a following wind became too light on the ship for kite-flying, and on the two other days a fresh head wind, augmented by the forward motion of the ship, was so strong as to endanger the kites, but, had it been possible to alter the course of the vessel, a favorable resultant wind might have been produced every day. The maximum height attained was only about 2,000 feet, but with larger kites and longer wire this could have been greatly exceeded. Automatic records were obtained of barometric pressure, air temperature, relative humidity and wind velocity, which did not differ markedly from records obtained in somewhat analogous weather conditions over the land. The most striking feature was the rapid decrease of the temperature with increasing height in all but one of the flights. The fall of temperature was fastest in the first 300 feet, where it exceeded the adiabatic rate of 1° Fahrenheit in 183 feet, but in the last-mentioned flight the temperature rose 6° in 660 feet, and during the afternoon remained so much warmer than at sea-level. The relative humidity varied inversely with the temperature, the direction of the wind shifted aloft toward the right hand when facing it, and its velocity generally diminished with altitude. These are probably the first meteorological observations at a considerable height in mid-Atlantic, and have a special importance because they indicate that at sea high-level observations may be obtained with kites in all weather conditions, only excepting severe gales, provided the steamer from which the kites are flown can be so manœuvered as to bring the wind to a suitable velocity.

As the basis of an appeal for the exploration of the atmosphere at sea, the records described were exhibited to the Geographical Section of the British Association at its Glasgow meeting, and the appointment of a committee, with a grant of money to undertake observations with kites in Great Britain, together with the interest manifested there and on the continent of Europe, encourages the hope that my project will be realized. The equipping of the English Antarctic vessel *Discovery* with meteorological kites, as mentioned on page 779 of SCIENCE, and a similar installation on the German Antarctic ship *Gauss*, are unlikely, for various reasons, to have yielded much data on their voyages across the equator. Although the United States has taken no part in this international undertaking, an opportunity is now offered, without material expense, danger or hardship, to cooperate in a study of the general atmospheric circulation, which is one of the objects of polar exploration. Indeed, for a naval vessel not actually engaged otherwise, the sounding of the atmosphere in the tropics, whereby the relation of the upper air